

***Brotherella roellii* (Ren. & Card in Roll) Fleisch.**

Status: State Threatened

Rank: SHG2

General Description: *Brotherella roellii* is a shiny golden yellow-green creeping moss that forms thin carpets. Plants are irregularly pinnate, 0.5-3 mm long, with branches 9.5-1 mm wide. Leaves are 0.8 - 1.2 mm long, ovate-lanceolate, acuminate, concave and often secund (leaves directed or twisted toward one side of the stem). A costa is lacking, or double and very short. Alar cells are strongly inflated and there is often a row of enlarged thick-walled cells extending across the leaf base. The cortical cells are inflated and larger than the interior cells. *Brotherella roellii* is autoicous with the capsule produced on a 0.6 - 1 cm long seta. The capsule is erect to somewhat inclined, straight or slightly asymmetric, 1-1.5 mm long. The operculum is long and narrow.

Identification Tips: This species can be confused with *Hypnum circinale*, a similar species that often grows in the same habitat. *Hypnum circinale* is a larger moss, dull grayish-blue-green color, with longer, linear flaccate or circinate leaves. The key distinguishing feature is the enlarged strongly inflated alar cells that occur in *Brotherella* and not in *H. circinale*. *Hypnum circinale* has a few, quadrate to rectangular and slightly inflated alar cells. A second distinguishing feature is the cortical cells: *H. circinale* has smaller thick-walled cells, while *Brotherella* has large, thin-walled inflated cortical cells.

Range: *Brotherella roellii* is endemic to the Pacific Northwest and is known only from southwestern British Columbia and Washington. In Washington there are five historic collections from the following counties: Jefferson, Pierce and Skagit.

Habitat: This species forms small glossy, golden yellow-green mats on rotten logs, stumps and the bases of red alder (*Alnus rubra*) trees in mixed low elevation deciduous and coniferous forest edges, usually in flood-plains.

State Status Comments: There are only five recorded sties within the state and all were collected prior to 1913. At the present time none of these historic sties have been relocated and no new sites have been found.

Inventory Needs: The five historic sites need to be revisited to establish their condition and to determine whether *Brotherella* persists there.

Threats and Management Concerns: This species is currently considered a Survey and Manage Category E species under the Northwest Forest Plan (USDA/USDI 2001). This classification carries the need to manage all known sites and conduct strategic surveys on USDA Forest Service and USDI Bureau of Land Management lands. Threats to this species include special forest product harvest such as moss or firewood gathering.

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References:

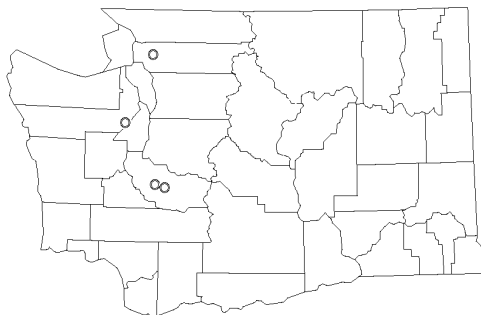
Lawton, E., 1971. Moss Flora of the Pacific Northwest. The Hattori Botanical Laboratory. Nichinan, Miyazaki, Japan. 362 pp.

USDA Forest Service USDI Bureau of Land Management. 2001. Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines. 147 pp. USDA Forest Service, Portland OR.



Photo by Judith Harpel, USFS

Known distribution of *Brotherella roellii* in Washington



● Current (1980+)

○ Historic (older than 1980)

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